4.2.3 The measurement procedure for testing the lifetime of general service incandescent lamps shall be as described in IESNA LM–49 (incorporated by reference; see §430.3). The lifetime measurement shall be taken by measuring the operating time of a lamp, expressed in hours, not including any off time. The percentage of the sample size that meets the minimum rated lifetime shall be recorded. The lamp shall be deemed to meet minimum rated lifetime standards if greater than 50 percent of the sample size specified in §429.27 meets the minimum rated lifetime.

4.2.3.1 Accelerated lifetime testing is not allowed. The second paragraph of section 6.1 of IESNA LM–49 is to be disregarded.

4.3 *Incandescent Reflector Lamps*

4.3.1 The measurement procedure shall be as described in IESNA LM–20 (see 10 CFR 430.22). Lamps shall be operated at the rated voltage as defined in §430.2.

4.3.2. Lamp lumen output shall be determined as total forward lumens, and may be measured in an integrating sphere at the reference condition in accordance with §7.2 of IESNA LM–20 (incorporated by reference; see §430.3) or from an average intensity distribution curve measured at the reference condition specified in §6.0 of IESNA LM–20. Lamp electrical power input in watts shall be measured and recorded.

4.3.3 Lamp efficacy shall be determined by computing the ratio of the measured lamp lumen output and lamp electrical power input at equilibrium for the reference condition. The test report shall conform to section 10.0 of IES LM–20 (incorporated by reference; see §430.3).

4.4 Determination of Color Rendering Index and Correlated Color Temperature

4.4.1 The CRI shall be determined in accordance with the method specified in CIE 13.3 (incorporated by reference; see §430.3) for general service fluorescent lamps. The CCT shall be determined in accordance with the method specified in IES LM–9 (incorporated by reference; see §430.3) and rounded to the nearest 10 kelvin for general service fluorescent lamps. The CCT shall be determined in accordance with the CIE 15 (incorporated by reference; see §430.3) for incandescent lamps. The required spectroradiometric measurement and characterization shall be conducted in accordance with the methods set forth in IESNA LM–58 (incorporated by reference; see §430.3).

4.4.2 The test report shall include a description of the test conditions, equipment, measured lamps, spectroradiometric measurement results, and CRI and CCT determinations.

[62 FR 29240, May 29, 1997, as amended at 74 FR 34177, July 14, 2009; 77 FR 4217, Jan. 27, 2012]

APPENDIX S TO SUBPART B OF PART 430—UNIFORM TEST METHOD FOR MEASURING THE WATER CONSUMPTION OF FAUCETS AND SHOWERHEADS

1. *Scope:* This appendix covers the test requirements used to measure the hydraulic performance of faucets and showerheads.

2. Flow Capacity Requirements:

a. Faucets—The test procedures to measure the water flow rate for faucets, expressed in gallons per minute (gpm) and liters per minute (L/min), or gallons per cycle (gal/cycle) and liters per cycle (L/cycle), shall be conducted in accordance with the test requirements specified in section 6.5, Flow Capacity Test, of the ASME/ANSI Standard A112.18.1M–1996 (see §430.22). Measurements shall be recorded at the resolution of the test instrumentation. Calculations shall be rounded off to the same number of significant digits as the previous step. The final water consumption value shall be rounded to one decimal place for non-metered faucets, or two decimal places for metered faucets.

b. Showerheads—The test conditions to measure the water flow rate for showerheads, expressed in gallons per minute (gpm) and liters per minute (L/min), shall be conducted in accordance with the test requirements specified in section 6.5, Flow Capacity Test, of the ASME/ANSI Standard A112.18.1M–1996 (see §430.22). Measurements shall be recorded at the resolution of the test instrumentation. Calculations shall be rounded off to the same number of significant digits as the previous step. The final water consumption value shall be rounded to one decimal place.

[63 FR 13316, Mar. 18, 1998]

APPENDIX T TO SUBPART B OF PART 430—UNIFORM TEST METHOD FOR MEASURING THE WATER CONSUMPTION OF WATER CLOSETS AND URINALS

1. *Scope:* This appendix covers the test requirements used to measure the hydraulic performances of water closets and urinals.

2. Test Apparatus and General Instructions:

a. The test apparatus and instructions for testing water closets shall conform to the requirements specified in section 7.1.2, Test Apparatus and General Requirements, subsections 7.1.2.1, 7.1.2.2, and 7.1.2.3 of the ASME/ANSI Standard A112.19.6–1995 (see §430.22). Measurements shall be recorded at the resolution of the test instrumentation. Calculations shall be rounded off to the same number of significant digits as the previous

step. The final water consumption value shall be rounded to one decimal place.

b. The test apparatus and instructions for testing urinals shall conform to the requirements specified in section 8.2, Test Apparatus and General Requirements, subsections 8.2.1, 8.2.2, and 8.2.3 of the ASME/ANSI Standard A112.19.6–1995 (see §430.22). Measurements shall be recorded at the resolution of the test instrumentation. Calculations shall be rounded off to the same number of significant digits as the previous step. The final water consumption value shall be rounded to one decimal place.

3. Test Measurement:

a. Water closets—The measurement of the water flush volume for water closets, expressed in gallons per flush (gpf) and liters per flush (Lpf), shall be conducted in accordance with the test requirements specified in section 7.1.6, Water Consumption and Hydraulic Characteristics, of the ASME/ANSI Standard A112.19.6–1995 (see §430.22).

b. Urinals—The measurement of water flush volume for urinals, expressed in gallons per flush (gpf) and liters per flush (Lpf), shall be conducted in accordance with the test requirements specified in section 8.5, Water Consumption, of the ASME/ANSI Standard A112.19.6–1995 (see §430.22).

[63 FR 13317, Mar. 18, 1998]

APPENDIX U TO SUBPART B OF PART 430—UNIFORM TEST METHOD FOR MEASURING THE ENERGY CONSUMPTION OF CEILING FANS

1. *Scope*. This appendix covers the test requirements used to measure the energy performance of ceiling fans.

2. *Definitions:*

a. *Airflow* means the rate of air movement at a specific fan-speed setting expressed in cubic feet per minute (CFM).

b. *Airflow efficiency* means the ratio of airflow divided by power at a specific ceiling fan-speed setting expressed in CFM per watt (CFM/watt).

3. *Test Apparatus and General Instructions:* The test apparatus and instructions for testing ceiling fans shall conform to the requirements specified in Chapter 3, ''Air-Delivery Room Construction and Preparation,'' Chapter 4, ''Equipment Set-up and Test Procedure,'' and Chapter 6, ''Definitions and Acronyms,'' of the EPA's ''ENERGY STAR Testing Facility Guidance Manual: Building a Testing Facility and Performing the Solid State Test Method for ENERGY STAR Qualified Ceiling Fans,'' Version 1.1, December 9, 2002 (Incorporated by reference, see §430.22). Record measurements at the resolution of the test instrumentation. Round off calculations to the same number of significant digits as the previous step. Round the final energy consumption value to the nearest whole number as follows:

(i) A fractional number at or above the midpoint between the two consecutive whole numbers shall be rounded up to the higher of the two whole numbers; or

(ii) A fractional number below the midpoint between the two consecutive whole numbers shall be rounded down to the lower of the two whole numbers.

4. *Test Measurement:* Measure the airflow and airflow efficiency for ceiling fans, expressed in cubic feet per minute (CFM) and CFM per watt (CFM/watt), in accordance with the test requirements specified in Chapter 4, ''Equipment Setup and Test Procedure,'' of the EPA's ''ENERGY STAR Testing Facility Guidance Manual: Building a Testing Facility and Performing the Solid State Test Method for ENERGY STAR Qualified Ceiling Fans,'' Version 1.1, December 9, 2002 (Incorporated by reference, see §430.22). In performing the airflow test, measure ceiling fan power using a RMS sensor capable of measuring power with an accuracy of ±1 %. Prior to using the sensor and sensor software it has selected, the test laboratory shall verify performance of the sensor and sensor software. Measure power input at a point that includes all power consuming components of the ceiling fan (but without any attached light kit energized). Measure power at the rated voltage that represents normal operation continuously over the time period for which the airflow test is conducted, and report the average value of the power measurement in watts (W). Use the average value of power input to calculate the airflow efficiency in CFM/W.

[71 FR 71366, Dec. 8, 2006]

APPENDIX V TO SUBPART B OF PART 430—UNIFORM TEST METHOD FOR MEASURING THE ENERGY CONSUMPTION OF CEILING FAN LIGHT KITS

1. *Scope:* This appendix covers the test requirements used to measure the energy performance of ceiling fan light kits.

2. *Definitions:*

a. *Input power* means the actual total power used by all lamp(s) and ballast(s) of the light kit during operation, expressed in watts (W) and measured using the lamp and ballast packaged with the kit.

b. *Lamp ballast platform* means a pairing of one ballast with one or more lamps that can operate simultaneously on that ballast. A unique platform is defined by the manufacturer and model number of the ballast and lamp(s) and the quantity of lamps that operate on the ballast.

c. *Lamp lumens* means a measurement of luminous flux expressed in lumens and measured using the lamp and ballast shipped with the fixture.